University of Northern Iowa
Funding Request: Electrical Distribution Loop System/ Load-Break Switches Project

The highest priority capital request for the University of Northern Iowa continues to be the Electrical Distribution System upgrade. Three million dollars was appropriated last year for the project and that work will be bid for construction starting this summer. The request for this year is 5.8 million for the balance of the project. The project will replace the outdated 4,160-volt electrical system with a 12,470-volt electrical system. It will also complete the electrical distribution loop system that provides the opportunity to correct electrical outages quickly without affecting a large part of campus. The electrical distribution system for portions of the campus has become unreliable and is in need of replacement. With the increased electrical demand throughout campus, especially considering advances in technology and computer use, a critical need exists to upgrade electrical switches and accommodate increasing loads. Most of the 4,160-volt electrical system is between 28 and 42 years old. Most of the equipment for that system has become inefficient, hazardous, and obsolete.

The 12,470-volt electrical system is more efficient and reliable and provides a safer electrical system for the campus. Over the years, the University has upgraded portions of the electrical distribution system to the 12,470-volt system. That is indicated in gold on the handout. Distribution lines shown in red on the handout are those that are included in the project which will commence this summer based on the 3 million dollar appropriation. Those areas that remain to be converted are indicated in purple and would be handled by the current request. Over the past 10 years the University has experienced over 25 power interruptions on parts of the campus. The majority of these occurred in the 4,160 volt electrical system. Electrical failures can mean no lighting for classrooms and offices, no electricity for computer or scientific equipment, disruption of meals at dining centers, and loss of heat during the winter months. Upgrading the system will accommodate increased electrical demand and protect the University from the change of a prolonged electrical outage.

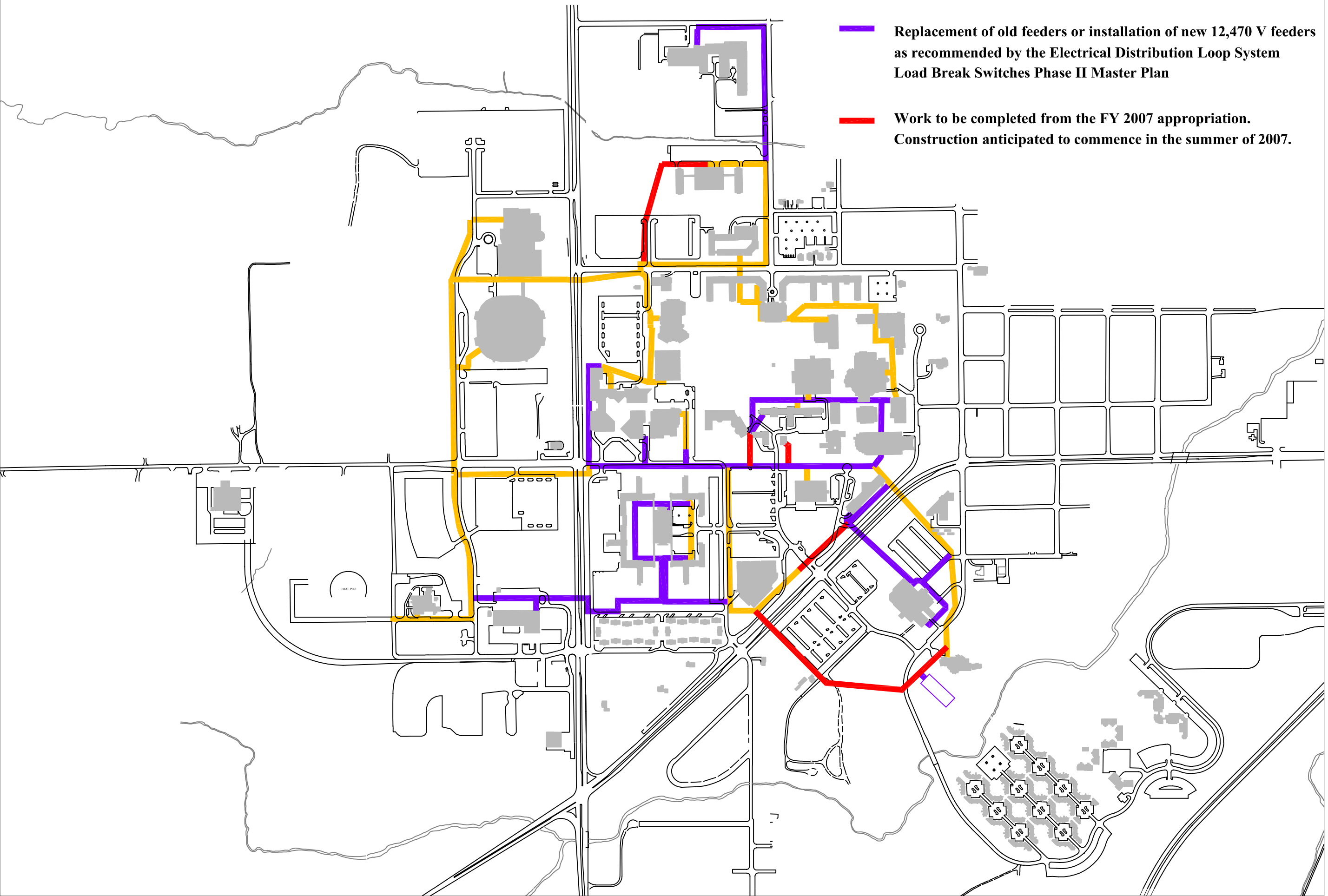
The University continues to present this as the highest priority capital request. The project is consistent with the Mission and Strategic Plan for the University of Northern Iowa by supporting facilities on campus with efficient and reliable electricity. The project will reduce outage time, accommodate increased loads, and eliminate potential hazards to personnel.

UNI Electrical Distribution Plan

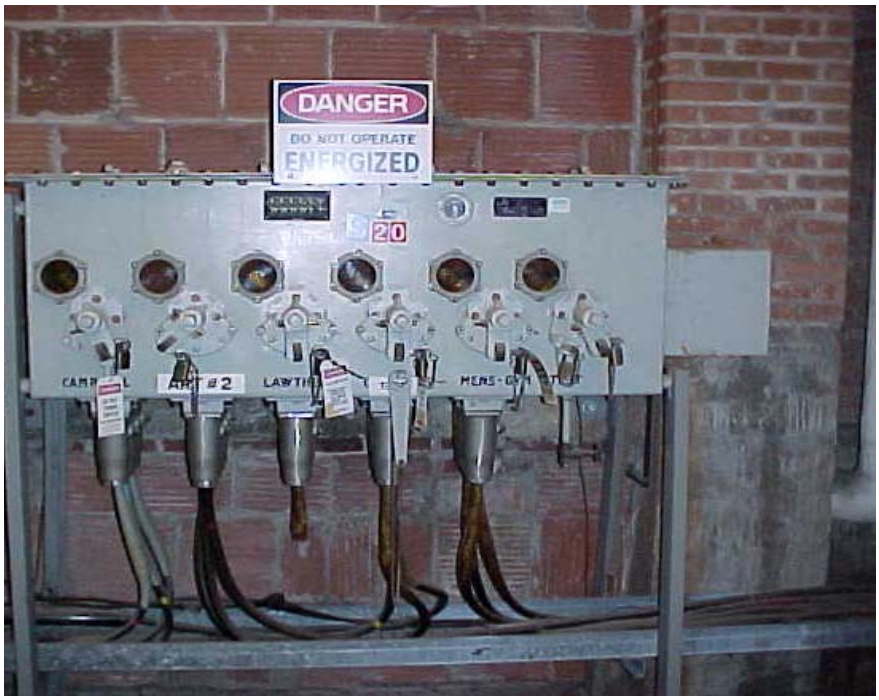
Updated 12,470 V feeders as of 2004 (phase I)

Replacement of old feeders or installation of new 12,470 V feeders as recommended by the Electrical Distribution Loop System Load Break Switches Phase II Master Plan

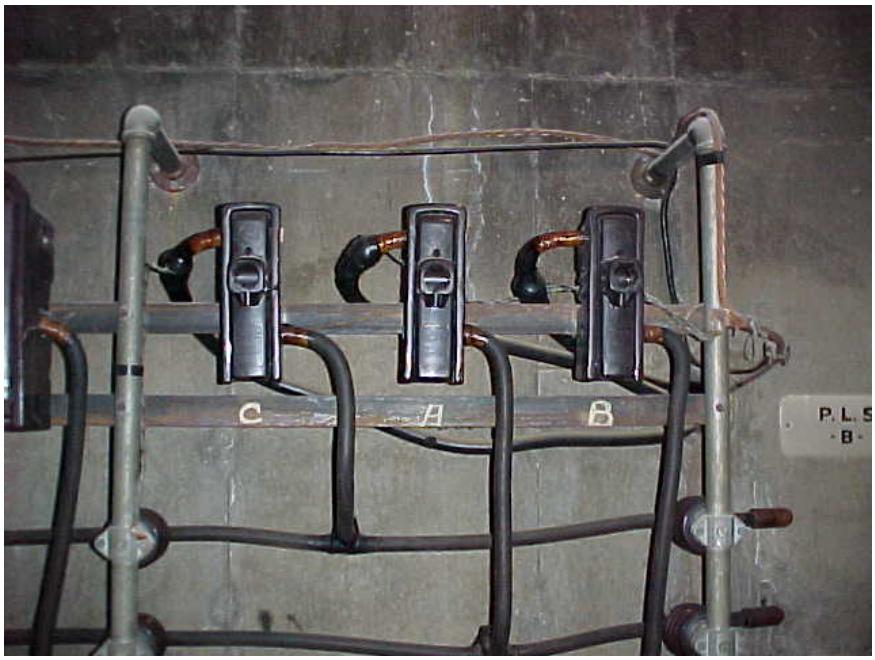
Work to be completed from the FY 2007 appropriation. Construction anticipated to commence in the summer of 2007.



University of Northern Iowa



Existing 4,160V Loop Switch…. Manufacturer Issued Disclaimer…. Limited Switch Operation…. Result: Unnecessary Building Electrical Outages….



Existing 4,160V Building Electrical Service Entrance Equipment…. Exposed Parts are a Potential Hazard…. Antiquated….Unreliable…. Replacement Parts Not Available….

New 12,470V Building Electrical Service Equipment…. Potentially Hazardous Parts are Enclosed…. Safe…. Reliable…. Functional